

OIPF

RAW SEQUENCE LISTING  
PATENT APPLICATION: US 09/474,435

DATE: 04/18/2000  
TIME: 13:41:23

Input Set: C:\CRF3\Datahold\09474435

Does Not Comply  
Corrected Diskette Needed

1 <110> APPLICANT: Kovalic, David K.  
2 McIninch, James  
3 Wiegand, Roger C.  
5 <120> TITLE OF INVENTION: ARABIDOPSIS THALIANA GENOME SEQUENCE AND USES THEREOF  
7 <130> FILE REFERENCE: 38-21(15473)B  
9 <140> CURRENT APPLICATION NUMBER: US 09/474,435  
9 <141> CURRENT FILING DATE: 2000-02-23  
9 <150> PRIOR APPLICATION NUMBER: USSN 60/089,524 1998-06-16; USSN 60/089,516 1998-06-16;  
W--> 22 <151> PRIOR FILING DATE: USSN(60/089,524)1998-06-16; USSN(60/089,516)1998-06-16;  
35 <160> NUMBER OF SEQ ID NOS: 195836  
37 <210> SEQ ID NO: 1  
38 <211> LENGTH: 576  
39 <212> TYPE: DNA  
40 <213> ORGANISM: Arabidopsis thaliana landsberg  
42 <223> OTHER INFORMATION: unsure at all n locations  
W--> 43 <400> SEQUENCE: 1  
W 45 ttcaactcaga tattgaacgt tncattaacg agaaaatcat ttttgcatTT acagngatag 60  
47 nogaacatgc tgggactagg gtaagatacn gngatgtcct tctgacctac ggatcttcca 120  
49 ctgtcattga gatgatatta gtgcattgcac atgaactcgg gaaaaagttt cgtgtctttg 180  
51 tgggtggattc tcgaccaaag cttcaaggga agctactgct tctgtagattg atcaaacgag 240  
53 gcattaaactg tacatacact catataaact ccatatcata tatcatgcac caagtaccca 300  
55 aagtgttttt gggcgctcca tcagtttttt ctaacggaac agtttactca aggggtggca 360  
57 ctgcttgtgt tgcaatgggt gctaagtctt tccgtgttcc tgtgcttgtt tgttgcggaag 420  
59 cctataaagt ccatgagaag gtgcagttgg attattcaat atgctccaat gagctcgggtg 480  
W-OK 61 atccaaatgc tatttcaaaa gttcatggaa gagaagacat aaactactta aatggcttga 540  
63 ccaacaatgc anagctgaag tttctgaact tgatgt 576  
66 <210> SEQ ID NO: 2  
67 <211> LENGTH: 661  
68 <212> TYPE: DNA  
69 <213> ORGANISM: Arabidopsis thaliana landsberg  
71 <400> SEQUENCE: 2  
73 aaatttagaa aaacggaaat cttggttact ggaagattac tggcaaacca aagcctatct 60  
75 tgcgtaacgg ccaagagatc ggtgagaaaa aggttttggat gttttacatg agtaaggaaac 120  
77 ttggtggatc caaatccgac tgggttatgc acgagtacca tgcctttctc cctactcagg 180  
79 ttttttttcc ctctgttttt gctctttacc gtgatttgat tgcctgtttt cgtgtatcgg 240  
81 gtgattgtga tttgactgaa tgttttttac agatgatgat gacatatata atattgaaaag 300  
83 ttatgtttaa ggggtgacgtg agagagattt cttcttcttc tgccttctct tatggtagtg 360  
85 aaattgagca gagtcgtgac tctttaatcc ctcttctgtt gaacgattct gaggtttgtc 420  
87 gatctcaaaa ctttctctgt tctcttttta aatccgataa ctgacttgtt ttgttggttg 480  
89 gtgatgtgca ggaagaagct caaatcgagg atgctatacc aatagaggaa tgggaaacat 540  
91 ggttgactga tgatggtgtt gatgagcagg tgaatcatat tatgaatatg aaagatgatc 600  
93 gcaacaacca caggcctcaa aagccattga ctggtgtcct gattgacgat agtagtgatg 660  
95 a 661  
98 <210> SEQ ID NO: 3  
99 <211> LENGTH: 492  
100 <212> TYPE: DNA  
101 <213> ORGANISM: Arabidopsis thaliana landsberg  
103 <223> OTHER INFORMATION: unsure at all n locations

insert this mandatory numeric identifier when displaying 22217, 22227, 22237 in (150) section - list (one per line) only the prior application number;  
do not list application numbers in (151) section - list (one per line) only the prior application dates

same error as above

RAW SEQUENCE LISTING  
PATENT APPLICATION: US 09/474,435

DATE: 04/18/2000  
TIME: 13:41:23

Input Set: C:\CRF3\Datahold\09474435

OK 104 <400> SEQUENCE: 3  
106 atccgaaatt tgaatgaatat ttctctgctc ctaggcttgt tgtttatgca gtaccatatg 60  
108 gatgtgttgt cccactcaag gttttgtaag tgtcgtaggt acttgaacta acttttcttt 120  
110 gcctgttgtt gtgtaagcag ggacgggtca atggaaattt acatgcggaa agaattgaga 180  
112 tattgaggat taaaccccat tggtaacaag ttacgtttgg ttgtacttac ttatttacag 240  
114 ctttcttata acaatcaaaa ctcttgccag ctactgaata tggagcactt cgaatgatgtt 300  
OK 116 tggcaaatg gccaatgaag tgtctatgcc cggatgctc gcggtntgac tacatattat 360  
OK 118 tgtggtatga ttntcctttt ttctggaatt catgagctaa ttgattctct tcttctctct 420  
W--> 120 tttacttcat gttttctggt ctttatcttc ctggtgaaat gaactcttaa tngctaacc 480  
122 gtaacttaca ag 492  
125 <210> SEQ ID NO: 4  
126 <211> LENGTH: 7290  
127 <212> TYPE: DNA  
128 <213> ORGANISM: Arabidopsis thaliana landsberg  
130 <400> SEQUENCE: 4  
132 gaagatgcta atggaccctt aaatcaattc cccatacatc aaagatctcc atttccaaga 60  
134 ttgggttctg aggcatttca ttcttctgct taatgttgcc ctttctctgc ctgagcgtct 120  
136 ttaaacattg atggttacca aaaatctact tgcagaatct ttgacactgt cttgaatgtc 180  
138 gcgaagtggg caccatattg agagccgtgg caatgtagca ggataccttc tacttcatct 240  
140 tctcagacgc atctcctgta aatcttatct ttacagagag tgtaaaggta aggcctcatc 300  
142 cagttagtaat ggtgtatgtc cctgaaaaac ttcttctctt cataactggt caacttgga 360  
144 gactctactt cgcagtccaa ataattgacg tgatcagcat accatggaga tcttccctca 420  
146 atagcactca gttggtggaa ctctttccca ctgtagctcc caccgaagaa tctacaacc 480  
148 atgagtgtct cttttggcat tgagtctgct atttgaatag gttcttcaat tctcatcctt 540  
150 gccagatggt caactgcacc attttcaatg tocttcttct ctactatct catgtcaaac 600  
152 tcgtgcaaca gaagtatgca tctcaacagt cttggtttag tacccttctt ggcatacata 660  
154 tgctcaaaag ttgcattggtc ttatagaca gtgaccttgg atccaaccaa atagcttctg 720  
156 aacttctcaa atgcgaatac aacagctaga agttccttct cagttgttgc atattaatat 780  
158 agctcaaat gccttaagct tactccctca aataagagat cgtcgttagc actttgataa 840  
160 taggttttta gtcaattatc ctaaaacacc aatcatgtca ttgtagtatt ttaggttgtc 900  
162 aatccaaatg ggtgtgatgc taacaatcaa gatgtgatca gaagcacta agtcaagcca 960  
164 agcataacag gttttggtgt gttccagcag toctaagtga acatgcagaa aacagaaaat 1020  
166 caaacagaaa cagtaaaaca ctcgaccaac acagctcttt gtagagctct gggtagagtc 1080  
168 gagtgcagag tcgagttaaca gacaggaaat gaaacaggga tactcgactg cacagtctgt 1140  
170 tgccagacaa ctgggtggtc gagtatcagg tcgactaaca gtaaagattt gcagaaacta 1200  
172 aacaacagat gacaggatgt agtaaacagt agtagagtaa acaataaaat caattagata 1260  
174 aagaattcct aaggatggga taattgagta gtttcgtttc ctcagtttac aggtgattga 1320  
176 catgctcaat aaattaacc tagacaacaa gttcattaac taaatctaag tgccaccgca 1380  
178 acagagactc tcaagctaac ctagtcccag actcaatcac cattgacgag agctaacccta 1440  
180 acaagcatta cgaatcaaca agttaaagcc aaaacgctcc ctgcaaccaa taccttggtg 1500  
182 cagggtcaca aatctatgga attagtgggt cagacatttc atcgaatacc ttttgggcgc 1560  
184 ggaaatgtct gggctcaaat tccagttgat cagaaagcaa taggcattaa gaacaactaa 1620  
186 tccagaaggg atctatcaat caatactcaa tcacctagca tactgagaat tctacactac 1680  
188 tctaaccocat cctcaggaac ctatttacta ctcatacatc ataatagaaa gcataaacgt 1740  
190 tgaacagggt gaagacatga taacaacagt gtaacagtag tgtgataaca aaatgaacaa 1800  
192 cagttaacga aaatcaagaa ccaaaaactga atactgaata gataaagaga aatccgatt 1860  
194 acaaaaagtc tagaacacaa ggtctgcgga aataaaacta ggtaaaaact tcttttttcg 1920  
196 aaaaatgagaa gtacatgcta cttatagcca aatatccgga aaccctaata ctcaaaacga 1980

RAW SEQUENCE LISTING  
 PATENT APPLICATION: US 09/474,435

DATE: 04/18/2000  
 TIME: 13:41:23

Input Set: C:\CRF3\Datahold\09474435

```

198 cgaagtattt ggacgggtta agaactgtac tcgacccagg tggctcgagt agaggtcgag 2040
200 tgaatagctg gaggcttctt ttcttccttg tgctcgagtg tctgggtgag tgcagaatga 2100
202 agaaggctct gaagcttggtc atcgagtatg .cagtcgagtg gtgtgatgga gatactcgac 2160
204 ctctaggtag agtgagtagg tctgagtggt gtctgatgat ggaggtgaag acactcgacc 2220
206 tcatggctga gtgaagtgat cgagtgccgg tctgggtgat gagacgaggg cactcggcct 2280
208 cggggtcgag tggtaggtg aagtgggtat gtccctact cgacctggcg gtcgagtgat 2340
210 ctcttgagat cttgaagctc ctactcgacc tctgggtcga gtgattatc atgatcaggt 2400
212 ccgcttcttc cagatagctc gtcaacagct ccaaatcacc ttaaatcaac gcaaatatgc 2460
214 aacatgcatg caaaactatc ctaaacatgc aaagtgatga caaatgatgt gaaatggtat 2520
216 gaaacaatga tgatatgatg ctaaagtatg gacaaatgga tgctcaaac atgcaaaaata 2580
218 cacacttatc accaagtgat taccttcttt gcaaacctct cctccactct ctgcgagca 2640
220 gagaacatc atggttgctg caactagaac taggttact aaccaattgg actgatacaa 2700
222 agaataccta cttcgatgaa tccgtgacag aggcacttcg ttgcaaatt tcttcattca 2760
224 ctcaagctcc acccgatcc cttagagcag cttggctcgg tatcagatct tattagcgtg 2820
226 aatgtcccca acatggtttt caagagagcc aactcattaa tatattctac agaggggtag 2880
228 ccaagccata ccggactcaa cttgatgcag cgagctactg taacttcag acaagaacta 2940
230 ctctgaagc attactcctc attaccaatg ctttaactag tctttcgaca caggaagtgt 3000
232 acacaaaaca aagaatttca gctgagaatg ccaccgcaag caaagagact ctgtttcag 3060
234 taatttctgc tccatccaa gcccccctt ccaccttctc tagacagcag acttgattcc 3120
236 atgtttgccc agattttcgc gtgcaaaaca aagctcgagg ataagttga tagcaaatat 3180
238 gattctctct atacagatct aaatagcagc attgacaatc tacgctctca tataacggaa 3240
240 ccctcaccta catcagcctc tatcaatgca gtcacattac gcaatggaaa gcaactgaat 3300
242 ccaataactc agcgcgaacg ttcagctcag ccttcactct taccagttgc agaaaaagac 3360
244 tcagttcgat tgacaccaat cactcttgac gactctgttt tgctttgtc gagtgaatc 3420
246 gacaatttgc tggaggagga ggaattatt cccgatggtg tcgatcgaca cccagctcgt 3480
248 tcagacaatg tgcaaatcca agctaaaacc aagtcagcaa atcggcaaat tcccttcccc 3540
250 aagagtccta aaaaaacaag ataagcctta gatgatgtca gatgcaaggc tatgattgat 3600
252 aaggttatta ttgagatggc tctagttaa gctattcact tctctccac aataagaagg 3660
254 tatgtcaaga caatggtcac taagaattta acgaaagaat acagtgttat gatgtttca 3720
256 gagcatggaa cgcatatcat ttaggaacga attccaagaa agctacctga ccctggaacc 3780
258 tttgtactaa gtgtcacat ccaaccaaga ttccttccca agagccttat gtgatctcg 3840
260 ttctagtgtg aatctgatgc ctggttcagt tgctaccttt atcactcttg tgttggtaga 3900
262 tcgttctacc cggattccag atggaattct tattgatgtt cccgggatga ttggaaagag 3960
264 catgattcct atagacttcg tagtcttgcc ttatgagaag gaacctaaag atccattaat 4020
266 ctttgggaga tccttcttgc acactgctgg agcaatcata gatgttcgac aaggcaggat 4080
268 agggctgaat gttggcaatc ttactatgca gttcaatatg aacactttgg tcaagaaacg 4140
270 gatcatagaa gggaaaacct tcttgataga ttccttccact tcatcagctt cagatagtat 4200
272 ttcagagatg gaattagaag acccactaga gcgagttttg gtctcttcca tagtgatag 4260
274 tgcagatttg gacagtgaat cttctacata tactaagctg caagatgaga ccgaacatgt 4320
276 gatgcaactt acggttgaa aagctcttcc atctgtgatt ccaacaccga ctattaattc 4380
278 agattgggat ccagcaaagg ctctcaaat cgatttgaaa ccacttcag cagggctaag 4440
280 gtacgctttt cttggtgaaa attctactta tcatgttatt gtgaatgttt ctcttaatcc 4500
282 cgcagagctc accttattgc taagcaagct gcgcaatcat cgcaaagctc ttggctattc 4560
284 tcttgatgac attgcaggta tatctccaga tgtatgcatg cataggattc accttgagga 4620
286 tgagtctaag tcttcggtga acatcagaga aggctgaatc cgaatctgaa agaagtgtt 4680
288 aagaaagaga ttatgaagct gttggaagca gggattatta atccgatttc agatagcagt 4740
290 tgggttagtc cagtttatgt agttcctaag aaaggagctg ttggaagcag ggattatcta 4800
292 ttcgatcttt gttatgctcc ttcaacattt cagagaggtg tgatgtctat cttcacagac 4860

```

RAW SEQUENCE LISTING  
PATENT APPLICATION: US 09/474,435

DATE: 04/18/2000  
TIME: 13:41:23

Input Set: C:\CRF3\Datahold\09474435

294 atgattgagg atatcatgga ggtcttcatg gatgatTTTT cagtttatgg atcatcgttt 4920  
296 gaggattgct tagagaatct ctgcaaagta ttagcaagat gtgaggcaaa acatctggtt 4980  
298 ttgaattggg agaaatgtca ctttatgatg taggatgaga tagttctcgg tcatagaatt 5040  
300 tttgagcatg gtatagaagt cgatagagct aagatcgaag ttatgacaag tcttcgagcg 5100  
302 cccgataatg ttaaagcaat gaggagtctt cttggacatg ctcgtttcta taggagattc 5160  
304 atcaaagggtt ttaggaaaat tgcaagacca ttgaccgctt tactctgtaa agaagttaaa 5220  
306 ttcgaatttt acataagagt gtcattgttg gacatgggca ttgcccttc aatgttagga 5280  
308 ggcccaaaac agatatcaac aaagaagagg gccttttgcc attaaaaagg ccatttaggt 5340  
310 cgagaaggcg aaaaatcataa ttgcaaggg agacagaacg gaatttaggg ttcagattcc 5400  
312 ctataaatag agagaaacac tattgggagc aagatccgat ccacagggtt ttagctgaga 5460  
314 gacaaagaga atcggttgct tgcccgaat cggttgctag cccgacctcg ttgcctagcc 5520  
316 gcacatcggt gcctcgccca tttctgtact ttgtctttct gcttttacga tgaagttctc 5580  
318 ggctcgggag gatagtctat aaccggcgag acaaaactag ttgtctgtaa tctctcgatc 5640  
320 tttgttatcg ttaataaaat ggaccaactc cggttcagccc ccaaaatctc gtatattatt 5700  
322 attattattg catccccaat acaataaatt gacgcccact gtggggccgt tgatcgaagc 5760  
324 tatccttttt tgacgagcct atgcacctcg accctcacia gattcgcggt gatatgatag 5820  
326 atacttcag cgatcagaa actgatactg gcatacctca agcgcccgac gcgctgggct 5880  
328 tacctcgct caaccagca gccatccgtg ccgagcatga tccctcggc cgaatcttgt 5940  
330 tcacaccaga cacaggagga gaaacagatc atgttcagggt cgcacgacct cctgccgcgc 6000  
332 ctacccccct cgcagttagt ccagccgacg aagcgaccgc agctgcagca gcagcagcaa 6060  
334 aaggcgccgc tcaaagacgt accacaacag cagaacgagg caccatttta gacgacctcg 6120  
336 ttcaaacatc tcttgatcga ctgcagcgac aggaagcagc aactaccgaa cggattgacg 6180  
338 cctttgtggc agcacaagtc acttcccaga gtcagatcga gcggcttcga cgcgaaaac 6240  
340 acacctccca acctcatgac aatcacgatg gacagcagtc tccgcgaact ccagtcaccg 6300  
342 agcgctcaga gacccatcgc cgtagaccag cgtcagttat cgtaggattc atcgacgagc 6360  
344 attctcgcg tagccacaa gatgaccaca acctacagaa cgaccacaat atgcagagcg 6420  
346 gcccacact gccgagcggg cacaacctgc agaacaaca caaccagcag agcgccaca 6480  
348 acgtgaaaaa cggccacaac cagcagaatg gccacaaca gcagagcggc tccaacctgc 6540  
350 ggaacgtgca caacatggtt cctaaccaca actatccgca gagtaatcat aatctgaacg 6600  
352 accacgatct cgcgagaggt caaatctgc caagcgacca gtattttccg aataaccaaa 6660  
354 ctctcgagtg caggcggtatc ttttcggatc gacctatcga agttgaaaac cgatccccgcg 6720  
356 atctggaact tgcacggttg aacgcggtaa caagagatat gtcttccaaa atgaattggg 6780  
358 ccaccaccgc ggccccgaa ctagagaggg tgttggaaga aacacaacgc tcgcccctca 6840  
360 cggcgctct ctgcgcagta cgcgtttgtc atgttaataa agtcaagcta ataccataca 6900  
362 acggtcttac cgaccccaag atcttctta aatcaatgtg cattgccatc aatggtgcac 6960  
364 attttttctg ctaagaaag tgatgctaga agttgccaaa tgttcttgga aaacctgact 7020  
366 gcagacgcac tcaactgggt ctgcggaatc ggagccaatt caatcgatag ctaccgaaaa 7080  
368 cttacatctt tattcctgca gcaccactcg gttttcatga ttaaggaggc cacaacgcc 7140  
370 gacttgtgga ccatgtctca gaaggaaagc gaaccactta gaactgtcat tgaaagattc 7200  
372 aagaagggtt tctcgaatat agccataact gatgatgcgg ctatcggggc tctacgaaac 7260  
374 gcgttaagtt tcggatcacg gtttagagaa 7290  
377 <210> SEQ ID NO: 5  
378 <211> LENGTH: 1864  
379 <212> TYPE: DNA  
380 <213> ORGANISM: Arabidopsis thaliana landsberg  
382 <223> OTHER INFORMATION: unsure at all n locations  
383 <400> SEQUENCE: 5  
385 tttagagtga gttttgtgtt aaagatatatt atttacctga cattatgaca atttctaata 60

→ L2207 same error

Please  
correct this  
error in  
subsequent  
sequences

RAW SEQUENCE LISTING  
PATENT APPLICATION: US 09/474,435

DATE: 04/18/2000  
TIME: 13:41:23

Input Set: C:\CRF3\Datahold\09474435

387 accacataaa tagttacaca aaagaattta gagtgagttt tgtgttaaag atacgacata 120  
389 acatttttct aatgacatta cagggaatgg cattactgac actatcagta tcgctaccgg 180  
391 gacttaaaacc accgaaatgt tgcacggcta atgttgaaaa ctgtgaaaaa gcttcgggta 240  
393 tacagtttagc ggtattcttt ggagcgttat acacattagc aatcggtaaa ggccgtacaa 300  
395 aaccgaacat ttctacaata ggtgctgac aattcgatga atttgaccca aaggacaaga 360  
397 ttcataaaca ttcatcttct aattgggtga tgtttagtat cttctttggg actttctttg 420  
399 ctacaactgt tcttgtctat gttcaagata atgttggttg gcccataggt tatgggcttt 480  
401 caactttggg acttgcttcc tccattttca tattcttgtt gggaaactcg ttataccgac 540  
403 ataaactccc aatgggaagc ccattcacca agatggctag agtcatcggt gcttcactta 600  
405 gcaaagcccg cgagccgatg tgcagtgatt cgacgcgctt ctatgagctt tcacctatgg 660  
407 aatatgctag caaaagggtt ttccaatcc atttacttt aagtctaagg taagtgaacg 720  
409 ttcgatttgg ttcggttcag tttaaatatt ttagatactt gctgcatttt gttaaaatac 780  
411 catatgtacc taagatttaa ctgtgttaca gattcttaaa tcgagcttca ctcaaaaccg 840  
413 gatcaaccga aagtcttcta ggcttcacaa catttcaat gctcgtctct atagtcata 900  
415 taaaatgtt acctgtcttc ttcgtaacat tgcgtccaag catgatgctt gctcaataaa 960  
417 tgactctgtt catcaaaaca ggaacgaccc tgcacgcgtc tctcacaac aacttcagta 1020  
419 tcccaccgca aagtcttcta ggcttcacaa catttcaat gctcgtctct atagtcata 1080  
421 acgaccgtgt ctttgttaag ttcagtgaag aactaaccgg aaaccaaga ggtatcacat 1140  
423 tgcttcagcg aatgggaatc ggtatgatcc ttcacatcct aatcatgatc atcgcgcca 1200  
425 taaccgaacg gtatagctc aaggtcgctg ctgaacacgg gctaaccac cagaccgctg 1260  
427 tacciaattcc tttgagcatt ttcacattgc ttcacagta tgtactaatg ggtttggctg 1320  
429 atgtctttat agaaatagca aagctggagt ttttctacga tcaagcacca gagagtatga 1380  
431 aaagccttgg gatcatcat acgagcacaa gtatggcagt cggaatttc atgagcagcg 1440  
433 tgttgccttc atcagtgctc cagataacaa agaagcaggg aagaggatgg attcaaaaca 1500  
435 acttgaacga gtctaggttg gtaactatt acatgttctt cgcggtaact aatttgctta 1560  
437 **acttcatcct cttcttgggt gtaattannnn nnnnnnnnnn nnnnnntgat gttacgcaat 1620**  
439 cagcaaacgt agaacagaaa gaaccaaata tggtagataa caacaatgag taaggaaaaga 1680  
441 cattaggttt ttatttgggt gtaataaaat gtatggattg gaaccaatta agcaaagcct 1740  
443 taaatccact tacaatcat aatcatacac tgctattgtg attcaagatt gttcacttaa 1800  
445 ataatgttt ctcaatcaga cactgagaaa acactaaaga ttgttcttgt gagttcatca 1860  
447 cata 1864  
450 <210> SEQ ID NO: 6  
451 <211> LENGTH: 3335  
452 <212> TYPE: DNA  
453 <213> ORGANISM: Arabidopsis thaliana landsberg  
455 <400> SEQUENCE: 6  
457 ctataagggtg aatttataga atgagttctt atcactgaat gtgttatcac tccatatgct 60  
459 tataataata taactctgtt taattaaata tgcagagtct tccatataaa cttgtgatag 120  
461 gatgcattccc actgtatgct gtgttgagaa tagcgcaaaa gatatttcaa gagcttccaa 180  
463 atctcattca gaattcagtg aaggctggct tgccttttgc atgtgcataa aacgctatag 240  
465 acaaacatcc ttactcaag gccattcctt cttccatga tatcaaatgg ggtcttgcaa 300  
467 ggtcttctta cctcttcaat actcagcttg agaagaacct tggcacgtac gtccttaaac 360  
469 cccaatgtag tctcagagtt ttaacgagta tagctgtttg caggcatgtg actatataatg 420  
471 acatccgttc tgatcacttg tcatggctat tgtagggtat ttgttggtgct cctgataaca 480  
473 tgcttttcgt ttgttatcat tggaggactc ttcttttca aattcaggta acttagctat 540  
475 gtttaagaac ttcttggat atccattgca tggtttctta cttttattcc cctccttctt 600  
477 gttgtgaagg aaagacacat ccttagaaga ctgcctctgg gaggcctggg catgcctcgt 660  
479 taacgctgat actcatctg aggtcatgat ttgcttcttc acagaacaac ttatattag 720

**Please Note:**

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

FYI

## VERIFICATION SUMMARY

PATENT APPLICATION: US 09/474,435

DATE: 04/18/2000

TIME: 13:41:24

Input Set: C:\CRF3\Datahold\09474435

L:9 M:270 C: Current Application Number differs, Replaced Current Application No  
L:9 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:22 M:256 W: Invalid Numeric Header Field, Wrong Prior FILING DATE:YYYY-MM-DD  
L:43 M:283 W: Missing Blank Line separator, <400> field identifier  
L:45 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:1  
L:45 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:1  
L:45 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:1  
L:45 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:1  
L:47 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:1  
L:47 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:1  
L:47 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:1  
M:340 Repeated in SeqNo=1  
L:63 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:1  
L:63 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:1  
L:63 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:1  
L:104 M:283 W: Missing Blank Line separator, <400> field identifier  
L:116 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:116 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:3  
L:116 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:3  
L:116 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:3  
L:118 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:118 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:3  
L:118 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:3  
M:340 Repeated in SeqNo=3  
L:120 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:3  
L:120 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:3  
L:120 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:3  
L:383 M:283 W: Missing Blank Line separator, <400> field identifier  
L:437 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:5  
L:437 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:5  
L:437 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:5  
L:437 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:5  
L:576 M:283 W: Missing Blank Line separator, <400> field identifier  
L:752 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:7  
L:752 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:7  
L:752 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:7  
L:752 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:7  
L:1047 M:283 W: Missing Blank Line separator, <400> field identifier  
L:1181 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:9  
L:1181 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:9  
L:1181 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:9  
L:1181 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:9  
L:1514 M:283 W: Missing Blank Line separator, <400> field identifier  
L:1544 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:14  
L:1544 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:14  
L:1544 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:14  
L:1544 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:14

## VERIFICATION SUMMARY

PATENT APPLICATION: US 09/474,435

DATE: 04/18/2000

TIME: 13:41:24

Input Set: C:\CRF3\Datahold\09474435

L:1623 M:283 W: Missing Blank Line separator, <400> field identifier  
L:1657 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:16  
L:1657 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:16  
L:1657 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:16  
L:1657 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:16  
L:2310 M:283 W: Missing Blank Line separator, <400> field identifier  
L:2318 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:25  
L:2318 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:25  
L:2318 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:25  
L:2318 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:25  
L:2399 M:283 W: Missing Blank Line separator, <400> field identifier  
L:2429 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:27  
L:2429 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:27  
L:2429 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:27  
L:2429 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:27  
L:2754 M:283 W: Missing Blank Line separator, <400> field identifier  
L:2770 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:32  
L:2770 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:32  
L:2770 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:32  
L:2770 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:32  
L:2772 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:32  
L:2772 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:32  
L:2772 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:32  
M:340 Repeated in SeqNo=32  
L:3447 M:283 W: Missing Blank Line separator, <400> field identifier  
L:3533 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:46  
L:3533 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:46  
L:3533 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:46  
L:3533 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:46  
L:3720 M:283 W: Missing Blank Line separator, <400> field identifier  
L:3904 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:50  
L:3904 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:50  
L:3904 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:50  
L:4171 M:283 W: Missing Blank Line separator, <400> field identifier  
L:4181 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:55  
L:5198 M:283 W: Missing Blank Line separator, <400> field identifier  
L:5200 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:63  
M:340 Repeated in SeqNo=63  
L:5331 M:283 W: Missing Blank Line separator, <400> field identifier  
L:5369 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:66  
L:5594 M:283 W: Missing Blank Line separator, <400> field identifier  
L:5610 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:71  
L:6105 M:283 W: Missing Blank Line separator, <400> field identifier  
L:6147 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:75  
L:6806 M:283 W: Missing Blank Line separator, <400> field identifier  
L:6834 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:81  
L:6969 M:283 W: Missing Blank Line separator, <400> field identifier  
L:6971 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:85

VERIFICATION SUMMARY  
PATENT APPLICATION: US 09/474,435DATE: 04/18/2000  
TIME: 13:41:24

Input Set: C:\CRF3\Datahold\09474435

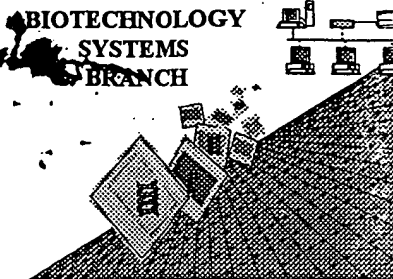
M:340 Repeated in SeqNo=85  
L:7488 M:283 W: Missing Blank Line separator, <400> field identifier  
----- L:7646 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:92  
L:7685 M:283 W: Missing Blank Line separator, <400> field identifier  
L:7733 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:93  
L:8070 M:283 W: Missing Blank Line separator, <400> field identifier  
L:8162 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:95  
M:340 Repeated in SeqNo=95  
L:8745 M:283 W: Missing Blank Line separator, <400> field identifier  
L:8859 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:101  
M:340 Repeated in SeqNo=101  
L:8874 M:283 W: Missing Blank Line separator, <400> field identifier  
L:8890 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:102  
M:340 Repeated in SeqNo=102  
L:8905 M:283 W: Missing Blank Line separator, <400> field identifier  
L:9067 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:103  
L:9262 M:283 W: Missing Blank Line separator, <400> field identifier  
L:9484 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:106  
M:340 Repeated in SeqNo=106  
L:9585 M:283 W: Missing Blank Line separator, <400> field identifier  
L:9593 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:109  
M:340 Repeated in SeqNo=109  
L:10042 M:283 W: Missing Blank Line separator, <400> field identifier  
L:10380 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:117  
L:11261 M:283 W: Missing Blank Line separator, <400> field identifier  
L:11437 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:125  
M:340 Repeated in SeqNo=125  
L:11630 M:283 W: Missing Blank Line separator, <400> field identifier  
L:11762 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:127  
M:340 Repeated in SeqNo=127  
L:11879 M:283 W: Missing Blank Line separator, <400> field identifier  
L:12135 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:128  
M:340 Repeated in SeqNo=128  
L:13088 M:283 W: Missing Blank Line separator, <400> field identifier  
L:13244 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:133  
M:340 Repeated in SeqNo=133  
L:14905 M:283 W: Missing Blank Line separator, <400> field identifier  
L:14971 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:155  
M:340 Repeated in SeqNo=155  
L:15050 M:283 W: Missing Blank Line separator, <400> field identifier  
L:15068 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:156  
M:340 Repeated in SeqNo=156  
~~L:15129 M:283 W: Missing Blank Line separator, <400> field identifier~~  
~~L:15504 M:283 W: Missing Blank Line separator, <400> field identifier~~  
~~L:15583 M:283 W: Missing Blank Line separator, <400> field identifier~~  
~~L:15982 M:283 W: Missing Blank Line separator, <400> field identifier~~  
~~L:16531 M:283 W: Missing Blank Line separator, <400> field identifier~~  
~~L:16778 M:283 W: Missing Blank Line separator, <400> field identifier~~

*ignore*



0512

# **RAW SEQUENCE LISTING** **ERROR REPORT**



The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following CRF diskette:

Application Serial Number: 09/474,435  
Art Unit / Team No. : 01PE  
Date Processed by STIC: 4/19/2000

J

**THE ATTACHED PRINTOUT EXPLAINS THE ERRORS DETECTED.**

**PLEASE BE SURE TO FORWARD THIS INFORMATION TO THE APPLICANTS BY EITHER:**

**1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANTS ALONG WITH A NOTICE TO COMPLY or,**

**2) CALLING APPLICANTS AND FAXING THEM A COPY OF THE PRINTOUT WITH A NOTICE TO COMPLY**

**THIS WILL INSURE THAT THE NEXT SUBMISSION RECEIVED FROM THEM WILL BE ERROR FREE.**

**IF YOU HAVE ANY FURTHER QUESTIONS, PLEASE CALL:**

**MARK SPENCER 703-308-4212**